

## REMARKS

The last Office Action of June 30, 2003 has been carefully considered. Reconsideration of the instant application in view of the foregoing amendments and the following remarks is respectfully requested.

It is noted with appreciation that the Examiner has withdrawn the requirement for election/restriction based on applicants arguments set forth in the last response, so that currently all claims are being examined.

Claims 1-26 are pending in the application. Claims 2, 4, 5, 7, 8, 9, 14, 15, 17, 18, 19 22 have been amended. Claims 1, 6 and 21 have been canceled. Claim 27 has been added. A total of claims are now on file. No claim surcharge is due.

It is further noted that claims 1-26 are rejected under 35 U.S.C. §112, first paragraph, because of informalities in the disclosures, or as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1-4, 6-9, 11-16, 19, 21, 23 and 25-26 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 4,348,634 (hereinafter "David").

Claims 1-4, 6-9, 11, 16-17, 19-23 stand rejected under U.S.C. §102(b) as being anticipated by U.S. Pat. No. 3,225,853 (hereinafter "Norton").

Claims 1-3, 5-7, 9, 11-13, 15-20, 25 stand rejected under U.S.C. §102(b) as being anticipated by U.S. Pat. No. 6,087,925 (hereinafter "De Volpi").

Claims 1, 14, 19 and 26 stand rejected under U.S.C. §102(b) as being anticipated by U.S. Pat. No. 4,493,219 (hereinafter "Sharp").

#### **REJECTION OF CLAIMS 1-26 UNDER 35 U.S.C. §112, FIRST PARAGRAPH**

Applicant has amended claims 2, 4, 5, 7, 8, 9, 14, 15, 17, 18, 19 22 to address the problems raised by the Examiner. The Examiner's assessment that there is insufficient disclosure is respectfully traversed. The present invention relating to the apparatus as claimed namely to control the driving or lifting gear of a hoist is seen from the combination of the description and Figures 1-6 as submitted. The control element is interacting with the metal tube 4 so that the control element 2 is able to swing about the pivot element 19 as supported by the disclosure in paragraph [0034]. This pivoting capacity supports the actuation of the transducer 5 which is directed in the direction of plane X.

In connection with the embodiment as shown in Fig. 6, there are shown 3 transducers and the 3 desired directions X, Y, Z. Since the control element can be moved vertically in the longitudinal direction of the metal tube 4 and thus interacts with transducer 5 in the direction of plane Y, this relative movement in the directions X, Y, Z is only by 1 to 2mm.

Furthermore, Figures 2 and 3 show the transducer 5 for the Z- direction being subject to the action of the actuating element 14 and wherein the relative

motion of the control element 2 relative to the metal tube 4 is shown when a manual force is applied during operation. For this motion, the entire transducer 5 is fastened in the housing of the control element 2. In the center region of the transducer 5, the lateral ends of the actuating element 14 projects from the transducer 5. As can be seen from the entire decryption of the transducer 5, the actuating element 14 is movably supported in a pretensioned manner via the elastic elements 12 and 13. The ends of the actuating element are supported almost free of play in the forked element 27 attached to the metal tube 4 by means of a screw 25. The ends of the actuating element 14 are thus firmly connected with the metal tube. Thus, the pivoting motion of the housing of the control element 2 relative to 19 and thus relative to the metal tube via the manual force of the operator leads to the actuation of the actuating element 15 of the transducer 5 which is disposed in the housing of the control element 2. Depending on the pivoting motion exerted by the operator on the housing of the control element (if seen from the Z direction either forward or rearwards) the sensor surface 6 additionally is either acted upon or not acted upon by the via the action of the actuating element 14 and the via the respective elastic element and results in a signal which when measured is unequivocally associated with the Z-direction.

In view of the foregoing discussion, it is submitted that the disclosure is in compliance with the requirement of 35 U.S.C. §112, first paragraph.

Withdrawal of the rejection of the claims 1-26 under 35 U.S.C. §112, first paragraph is thus respectfully requested.

**REJECTION OF CLAIMS 1-4, 6-9, 11-16, 19, 21, 23 AND 25-26 UNDER 35  
U.S.C. §102(b) AS BEING ANTICIPATED BY DAVID**

The rejection under 35 U.S.C. 102(b) is believed to have been obviated.

In order to clearly distinguish the present invention from David, applicant has cancelled claim 1 and presented new independent claim 27. Claim 27 sets forth the features of former claim in addition to additional features of the invention such as the relationship between the control element, the actuating element and the push rod and how the control element acts on the sensor surface via the pushrod. Furthermore, the claim also amplifies that each transducer can be activated exclusively through the manual force in a desired direction.

David discloses a pivotable sensor rod suspended at 4 leaf springs (a-d) arranged in starshaped manner in one plane at the end of the sensor rod 31. Below the springs extension measuring tapes (Ja1 to Jd2) are arranged. Pivoting of the sensor rod leads to a change of the stress on the springs (a-d) and thus to a respective change in resistance of the corresponding extension measuring tapes, by which the extension of the sensor rod 31 can then be determined. The sensor surfaces are oriented only perpendicular to the desired direction when the sensor rod 31 receives a manual force in the Z-direction. In the Z-direction, sensor rod 31 is pretensioned via a spring element 37 in order to relieve some of the load from sensor rod. (See col. 4 lines, 58-63).

The so generated control signals in David are thus proportional in distance relative to the pivoting or movement of the sensor rod 31.

An essential distinction as compared to the David reference is that in the device as claimed, control is proportional to the force exerted. In other words, the sensor rod is not pivoted in the desired direction like a control lever in order to measure the size of the pivot. An operator applies to the outer control element 2 only a small motion in the range of about 1mm-2mm so that essentially a force is exerted relative to the stationary metal tube 4 for controlling the motion. The direction and the size of the force signal is measured in 3 directions, X,Y,Z of a Cartesian coordinate and that are orthogonal to each other and their respective sensors for each direction independent of each other with respect to the control of the corresponding motion force. The movability of the outer control element 2 relative to the metal tube 4 serves exclusively to transmit the force onto each of the transducers independently from each other.

Another essential difference as compared to the David reference resides therein that the arrangement in David requires eight sensors that are connected to each other and that are in the form of the extension measuring tapes which supply eight separate signals which only collectively provide information about the size and direction of the sensor rod 31. Accordingly, eight electrical signals must be computed together in various computing operations in order to obtain for each of the three directions a value for the control of the motion force. No extension measuring tapes can thus be reduced if less than 3 motion devices have to be controlled.

Since claim 2-4, 6-9, 11-16 depend directly or indirectly from claim 27 these claims contain all the limitations of claim 27 and as such, these claims are patentable over David in the same manner as claim 27.

With respect to independent claim 19, this claim likewise differentiates from the Davis reference.

As presently drafted claim 19 contains the features of the transducer having a sensor surface configured to change a resistance in response to the applied force and extending perpendicular to the actuating direction, so that the transducer can be activated exclusively through the manual force exerted in the desired direction, wherein the biasing means includes two elastic members applying spring forces in opposition to one another and thereby supporting the handle in a prestressed manner.

As was discussed in connection with the newly presented claim 27, claim 19 contains additional features which distinguish over David. David does not disclose that each of the transducers can be activated exclusively through the manual force exerted in the desired direction.

Withdrawal of the rejection of claims 1-4, 6-9, 11-16, 19, 21, 23 and 25-26 under 35 U.S.C. §102(b) is thus respectfully requested.

**REJECTION OF CLAIMS 1-4, 6-9, 11, 16-17, 19 and 21-23 UNDER  
35 U.S.C. §102(b) AS BEING ANTICIPATED BY NORTON.**

In view of the presentation of new independent claims 27, the Norton

reference has been differentiated.

Norton does not disclose an apparatus with at least one electrical transducer, coupled to the control element, for converting the manual force acting in the desired direction into an electric signal, so that the at least one transducer can be activated exclusively through the manual force exerted in the desired direction, wherein the transducer includes a force sensor, a pushrod with an end surface and an actuating element, wherein a sensor surface of the force sensor extends in a direction perpendicular to the desired direction for interaction with the control element, and wherein the control element acts upon the sensor surface via the end surface of the push rod, and the actuating element which is accessible from outside is actuated by the control element in the desired direction, wherein the control element is supported by the push rod via the elastic member.

Withdrawal of the rejection of claims ... under 35 U.S.C. §102(b) is thus respectfully requested.

**REJECTION OF CLAIMS 1-3, 5-7, 9, 11-13, 15-20, 25 UNDER 35 U.S.C.  
§102(b) AS BEING ANTICIPATED BY DE VOLPI**

In view of the cancellation of claim 1, the amendments to claim 19, the presentation of new claim 27, the claims as presently on file differentiate from the De Volpi reference.

De Volpi discloses a joystick pointing device. De Volpi states that the corresponding increase in force on the force diverter either increases the surface area of contact for change in resistance or it changes the absolute point of the voltage potential, wherein the force diverter can either be electrically active conductive or can be pressure transfer causing a variable closure on the membrane.

De Volpi does not disclose that the transducer includes a force sensor, a pushrod with an end surface and an actuating element, wherein a sensor surface of the force sensor extends in a direction perpendicular to the desired direction for interaction with the control element, and wherein the control element acts upon the sensor surface via the end surface of the push rod, and the actuating element which is accessible from outside is actuated by the control element in the desired direction, wherein the control element is supported by the push rod via the elastic member.

With respect to claim 19, De Volpi also does not disclose that the transducer can be activated exclusively through the manual force acting in the desired direction.

For the above-reasons, the reference does not anticipate the device as claimed.

Withdrawal of the rejection of claims 1-3, 5-7, 9, 11-13, 15-20, 25 under 35 U.S.C. §102(b) is thus respectfully requested.



**REJECTION OF CLAIMS 1, 14 19 and 26 UNDER 35 U.S.C. §102(b) AS  
BEING ANTICIPATED BY SHARP**

In view of the cancellation of claim 1, the amendments to claim 19, the presentation of new claim 27, the claims as presently on file differentiate from the Sharp reference.

Sharp discloses a force transducer. However, Sharp does not disclose that the transducer includes a force sensor, a pushrod with an end surface and an actuating element, wherein a sensor surface of the force sensor extends in a direction perpendicular to the desired direction for interaction with the control element, and wherein the control element acts upon the sensor surface via the end surface of the push rod, and the actuating element which is accessible from outside is actuated by the control element in the desired direction, wherein the control element is supported by the push rod via the elastic member.

With respect to claim 19, Sharp also does not disclose that the transducer can be activated exclusively through the manual force acting in the desired direction.

For the above-reasons, the reference does not anticipate the device as claimed.

Withdrawal of the rejection of claims 1, 14, 19, 20 under 35 U.S.C. §102(b) is thus respectfully requested.

## CITED REFERENCES

Applicant has also carefully scrutinized the further cited prior art and finds it without any relevance to the newly submitted claims. It is thus felt that no specific discussion thereof is necessary.

It is noted that the Examiner has not made of record the reference cited in the instant specification.

## CONCLUSION

Applicant believes that when the Examiner reconsiders the claims in the light of the above comments, he will agree that the invention is in no way properly met or anticipated or even suggested by any of the references however they are considered.

None of the references discloses a manual control wherein the transducer can be activated exclusively through the manual force exerted in the desired direction.

In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentably differentiated over the art and should be allowed.

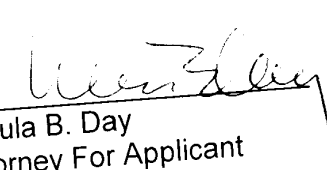
Applicant further submits a new Declaration indicating the correct post office address of the inventor. A certified copy of the priority document under 35 U.S.C. §119(a)-(d), and formal drawings are enclosed herewith.

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Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

Respectfully submitted,

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